

YW



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/972,929	10/10/2001	Richard C. Rose	109039	4843

7590 04/12/2005

S. H. DWORETSKY  
 AT&T CORP  
 ROOM 2A-207  
 ONE ATT&T WAY  
 BEDMINSTER, NJ 07921

EXAMINER

WOZNIAK, JAMES S

ART UNIT	PAPER NUMBER
----------	--------------

2655

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/972,929

Applicant(s)

ROSE ET AL.

Examiner

James S. Wozniak

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/10/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. In response to the office action from 7/22/2004, the applicant has submitted an amendment, filed 11/22/2004, amending Claims 1, 5, 9, and 13-14, while adding claims 15-20 arguing to traverse the art rejection based on the limitation regarding the determination of a background noise model during a received voice request (*Amendment, Page 8*). The applicant's arguments have been fully considered but are moot with respect to the new grounds of rejection in view of Damoulakis et al (*U.S. Patent: 4,720,802*).

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gong (U.S. Patent: 6,418,411) in view of Damoulakis et al (*U.S. Patent: 4,720,802*).

With respect to **Claims 1, 5, 9, and 13**, Gong discloses:

Determining parameters of a background model of a received voice request (*on-line noise compensation, Fig. 1, Elements 19-20; determining background noise parameters, Col. 2, Lines 35-47*);

Determining parameters of a transducer model (*one time adaptation, Fig. 1, Element 12; and calculating microphone (transducer) characteristics, Col. 1, Lines 59-62*);

Determining an adapted speech recognition model for a speech recognition model based on at least one of the background model and the transducer model (*producing an adapted model based on the inputs from the on-line noise estimation and the one-time adaptation (transducer adaptation), Fig. 1, Element 20 and Col. 2, Lines 44-50*).

Determining information in the voice request based on the adapted speech recognition model (*steps 4 and 5, Col. 2, Lines 58-61*);

Although Gong teaches the means for determining background noise model parameters, Gong does not teach a means for determination during a received voice request, however Damoulakis teaches a means for continuously obtaining background noise parameters during a speech recognition process (*Col. 31, Lines 43-66; Abstract*).

Gong and Damoulakis are analogous art because they are from a similar field of endeavor in speech recognition in the presence of noise. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Gong with the means for continuously obtaining background noise parameters during a speech recognition process as taught by Damoulakis to implement more accurate recognition model adjustment for time variant noise by continuously monitoring a noise content during a speech recognition process (*Damoulakis, Col. 6, Lines 5-20*).

With respect to **Claims 2, 6, and 10**, Gong further recites:

Determining at least one sample period (*sample period for background noise, Fig. 2*).

Determining at least one of a new background model and a new transducer model based on the at least one sample period (*background model is determined based on the samples from the sample period, Col. 2, Lines 43-45 and Fig. 1, Element 19*).

With respect to **Claims 3, 7, and 11**, Gong additionally discloses:

The parameters of the background model are determined based on a first sample period (*sample period for background noise estimation, Fig. 2, Col. 5, Lines 29-32*).

The parameters of the transducer model are determined based on a second sample period (*sample for a transducer model during a one time adaptation, which takes place before on-line adaptation and thus, inherently requires a second, distinct sampling period, Col. 5, Lines 23-28*).

With respect to **Claims 4, 8, and 12**, Gong additionally discloses:

Saving at least one of the parameters of the background model and the parameters of the transducer model (*background noise is recorded and estimated, Col. 2, Lines 43-44*);

Determining the adapted speech recognition model based on the at least one sample period and at least one of the background model and the transducer model (*after noise sampling, the system then proceeds to produce an adapted model based on the inputs from on-line noise compensation, Fig. 1, Element 19; and one-time adaptation (transducer adaptation), Fig. 1, Element 20; and Col. 2, Lines 44-50*).

With respect to **Claim 14**, Gong recites:

Determining user specific parameters of a background model for a received voice request (*on-line noise compensation, Fig. 1, Elements 19-20; determining background noise parameters, Col. 2, Lines 35-47; and speaker-adapted models, Fig. 1, Element 12*).

Determining parameters of a background model of a received voice request (*on-line noise compensation, Fig. 1, Elements 19-20; determining background noise parameters, Col. 2, Lines 35-47*);

Determining parameters of a transducer model (*one time adaptation, Fig. 1, Element 12; and calculating microphone (transducer) characteristics, Col. 1, Lines 59-62*);

Determining an adapted speech recognition model for a speech recognition model based on at least one of the background model and the transducer model (*producing an adapted model based on the inputs from the on-line noise estimation and the one-time adaptation (transducer adaptation), Fig. 1, Element 20 and Col. 2, Lines 44-50*).

Determining information in the voice request based on the adapted speech recognition model (*steps 4 and 5, Col. 2, Lines 58-61*);

The parameters of the background model are determined based on a first sample period (*sample period for background noise estimation, Fig. 2, Col. 5, Lines 29-32*).

The parameters of the transducer model are determined based on a second sample period (*sample for a transducer model during a one time adaptation, which takes place before on-line adaptation and thus, inherently requires a second, distinct sampling period, Col. 5, Lines 23-28*).

Although Gong teaches the means for determining background noise model parameters, Gong does not teach a means for determination during a received voice request, however Damoulakis teaches a means for continuously obtaining background noise parameters during a

speech recognition process (*Col. 31, Lines 43-66; Abstract; and speaker dependent recognition, Col. 31, Lines 33-36*).

Gong and Damoulakis are analogous art because they are from a similar field of endeavor in speech recognition in the presence of noise. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Gong with the means for continuously obtaining background noise parameters during a speech recognition process as taught by Damoulakis to implement more accurate recognition model adjustment for time variant noise by continuously monitoring a noise content during a speech recognition process (*Damoulakis, Col. 6, Lines 5-20*).

With respect to **Claims 15 and 19**, Damoulakis recites:

Constantly determining the parameters of the background model while receiving the voice request (*continuously obtaining background noise parameters during a speech recognition process, Col. 31, Lines 43-66; Abstract*).

With respect to **Claim 16**, Gong recites;

Sampling periods of speech inactivity while receiving the voice request (*speech pauses, Col. 5, Lines 29-32*).

With respect to **Claims 17 and 20**, Damoulakis discloses:

Determining background noise parameters occurs at a periodic time throughout the voice request (*sampling rate, Col. 6, Line 63- Col. 7, Line 1*).

With respect to **Claim 18**, Damoulakis discloses:

The periodic time is modifiable (*predetermining a sampling rate, Col. 6, Line 63- Col. 7, Line 1*).

***Conclusion***

4. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Yamaguchi et al (*U.S. Patent: 6,026,359*)- teaches speech recognition model adaptation that provides model adjustment based on background noise conditions present in input speech.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632




Art Unit: 2655

and email is James.Wozniak@uspto.gov. The examiner can normally be reached on Mondays-Fridays, 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached at (703) 305-4827. The fax/phone number for the Technology Center 2600 where this application is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center receptionist whose telephone number is (703) 306-0377.

James S. Wozniak  
4/6/2005



DAVID L. OMETZ  
PRIMARY EXAMINER